A

Synopsis Submitted

On

Impact of Sugar Industry on Regional Development in Lower Bhima Basin : A Geographical Analysis

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Synopsis

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INTRODUCTION

Geography is concerned with special distribution of various characteristics on the surface of the earth. But in ancient time's geographer were concerned with the identification of the phenomena which give distinctive character to different places on the earth. Environment which is created on the surface of earth is studied deeply in geography. Geography studies all the phenomena of nature of landscape, and distribution of water, climate, settlement, economic activities which have later on become distinguished sub-braches of geography.

As human geography become more interested in theory and models, industrial geography was able to benefit from existing work in economic. All this items of expenditure which are regarded constituting human investment are as important as or more important than investment in material capital for promoting development.

1.1 GEOGRAPHICAL APPROACH

Geography is concerned with spatial distribution of various characteristics on the Surface of the Earth. But in ancient times, geographer were concerned with identification one of the phenomenon which give distinctive character to different places on the earth. These phenomenons were mainly related to human beings in different places.

Environment which is created on the Surface of the earth is studied deeply in geography. Environmental characteristics are different in different places. All these elements are studied together in geography.

Also geographical approach often uses to describe high level of vision for using geospatial technology as a key method in finding answer to problems

Also this approach we can analyze environmental as well as physical geography of earth surface and its interrelationship with various activities and this geographical knowledge way of thinking and problem solving that integrates geographical information for understand and manage to our planet

Several branches have been developing and each branch is interrelated. Geography is an integrative discipline which combines natural and social sciences. As such geography is at once an art, a science and a philosophy according to Sir Alfred Mackinder. The geography studied all phenomenons of nature, land, water, climate, soil, population settlement, economic activities which have later on become distinguished sub-branches of geography.

1.2 HUMAN GEOGRAPHICAL APPROACH

Human geography is the branch of the social sciences that deals with the world, its people and their communities, cultures, economies and interaction with the environment by emphasizing their relation with and across space and place. There is close relationship between man and environment. Man uses environment for his development through utilization of the resources. The Human geography becomes more interested in theory and models.

Industrial Geography was able to benefit from the existing work in economic sectors. The birth of modern Location Theory goes back to 1909, when the German Economist Alfred Weber published his theory of Industrial Location in 1929. This book provided the foundation of the Variable cost analysis approach to Location theory.

The most important role of Industrialization will be that the absorbing the human potential to reach on satisfactory level of production. It is also necessary to remember that the problem of poverty and unemployment of national defense and economic regeneration in general cannot be solved without industrialization. Human investment, capital power, water supply transport and communication are vital elements in the process of agricultural and industrial development.

1.3 ECONOMIC GEOGRAPHICAL APPROACH

Economic Geography is an important branch of geography. Economic geography is study of man and his economic activities under varying sets of condition; it means the study of the spatial distribution of man's economic activities in relation to its environment. The man's basic economic activities classify them in to three sectors namely primary, secondary and tertiary. Agriculture is the main occupation of several people which is about 70% population depends upon agricultural sector activities. Therefore the raw material for the industry is derived from the agriculture only.

1.4 AGRICULTURE GEOGRAPHICAL APPROACH

Agriculture Geography is one of the important branches of geography. Agriculture is by far the most important of the world's economic activities. It uses one-third of the total land surface and employs 45 per cent of the Working population. Yet the study of agriculture receives relatively little Attention from geographers. Thus, the study of agriculture geography is clearly important. The subject may be simply defined as Agricultural geography seeks to describe and explain spatial variations in agricultural activity over the earth's surface. The heart of this task is to explain the great diversity of agriculture. It has been estimated that there are over 250 million farmers in the world. Between them they grow many different crops at least 1000 species are in use and they raise these crops in a variety of ways. Also it was experienced remarkable changes within the last fifty years in India. Industry is second important source after agriculture in India since five year plan period for better achievements of industrial development. There are several agro-based industries such as Sugarcane Industry, Cotton textile, Dairy Industries, Food processing Industries etc. which plays an important role in the development of rural areas.

After the independence, it has achieved remarkable progress in the rural regional development through Co-operative sectors. Green revolution is the result of such proper planning through five year plan. Unfortunately agro-based industries have suffered in recent period. Agro-based industry such as the Sugar Industry is the clue of socio-economic transformation in the rural area.

The rural area of Maharashtra has in recent years profoundly affected by the development of Sugar Industries. The development and changes have been accelerated during the last decade with the sugar industry achieving greater production and profitability.

These are inter linked with increasing production of sugarcane leading to the establishments of sugar factories and increase the number of the factories resulting per hector yield of sugarcane cultivation. Also there have been improvements in the methods of irrigation and agricultural technologies as well as concentrated research leading to improvement in the new seeds for better yields of Sugarcane. The Solapur District is an important geographical location for the agro-based industries. Which is out of total cultivated area of the district is 24% cultivated area is brought under the irrigated farming. This irrigated land mostly occupied for the crops like Sugarcane cultivation. Because of favorable climatic situations and irrigation facilities found here for Sugarcane cultivation and other some seasonal crops.

At present there are sixteen (16) sugar factories run under Co-Operative sectors. This figure has become doubled with twenty years span (1981-2001) These Sugar Industries are boost of changing the socio economic development in rural area. Hence the present study focuses the socio-economic transformation in Lower Bhima Basin due to sugar industries.

1.5 INDUSTRIAL GEOGRAPHICAL APPROACH

Definition of industrial geography which is a branch of geography that deals with the location of industries, the geographic factors that influence their location and development, the raw materials used in them, and the distribution of their finished products.

In the field of industrial geography a study in details is necessary particularly in relation to agriculture area. Traditionally there are two approaches in the industrial geography for studying the distribution of the industries

I. The first approach is to account for difference in the development of particular industries

ii. The second approach is more useful to analyze the distribution of industries within a smaller area in that region.

Industrial geography is one of the youngest and well established branches of economic geography in true sense come into existence in the beginning of 20^{th} century. It is studies the factors, regularities and features of the location and development of industrial production in various countries and regions.

After the first and second world war there are rapidly industrialization has been started in most of the countries in the world. The term industry which is loosely used in common speech describes a wide range of activities and has many meanings from work performed from economic gain to operations by which raw materials are processed and goods produced.

Also above statements regards regional industrial geography studies industrial production as a whole in its development and distribution with regard to the totality of the economic and natural conditions within a given territory. The territories studied includes-

(1) Economic Sub regions, concentrations or important centers.

(2) Economic regions and

(3) Countries or regions of various types and subtypes.

With regards to these areas, attention is focused on the study of historical and geographic features of industrial formation; the nature of modern industrial branch macrostructure and

microstructure on the whole in view of the level of development achieved ; position in the international (socialist or capitalist) division of labor; and economic and geographic situation, natural resources, and so on.

Regional industrial geography examines the basic patterns of territorial structure, characteristics of industrial regionalization, and types of industrial regions.

Above the term industry refer mainly to manufacturing activity and essential function of it is the transformation of material or material into a product which is of greater value than original material. The purpose of manufacturing industry is to alter and process material so that they sure new ends and satisfy different requirement. Therefore agriculture mining and most of other services are excluded from the term of industries. And it is in this sense the term industry mainly used in the entire present study.

1.6 SLOW GROWTH OF INDUSTRIAL GEOGRAPHY

Industrial geography is young branch of economic geography. In other nations systematic study in the field of industrial geography started with the work of Christaller, W. Rawtson, Hartshorne are studies in the field of industrial geography. A review of research work done by the Indian geographers in the field of industrial geography is relevance of following characteristics:-

- A few geographers produce a really geographical analysis of locational aspects
- The problems of growth and prospects of development of sugar industries
- A few geographers have analyzed different aspects of concentration and dispersal of sugar industry.

1.7 SUGAR INDUSTRIES

The Sanskrit word for "sugar" (*sharkara*) also means "gravel" or "sand". Similarly, the Chinese use the term "gravel sugar" (Traditional Chinese) for what the West knows as "table sugar. Also many words are available in Arbi-Parsi, Greek, Latin, Modern European language etc. Indian language Sugar is called Khand. Sugarcane originated in tropical South Asia and Southeast Asia. Different species likely originated in different locations with *S.barberi* originating in India and *S.edule* and *S. officinarum* coming from New Guinea. Originally, people chewed sugarcane raw to extract its sweetness. Indians discovered how to crystallize sugar

during the Gupta dynasty, around 350 AD. Indian sailors, consumers of clarified butter and sugar, carried sugar by various trade routes. Traveling Buddhist monks brought sugar crystallization methods to China. During the reign of Harsha (r. 606–647) in North India, Indian envoys in Tang China taught sugarcane cultivation methods after Emperor Taizong of Tang (r. 626–649) made his interest in sugar known, and China soon established its first sugarcane cultivation in the seventh century. Chinese documents confirm at least two missions to India, initiated in 647 AD, for obtaining technology for sugar-refining. In South Asia, the Middle East and China, sugar became a staple of cooking and desserts. In the year 1792, sugar rose by degrees to an enormous price in Great Britain. The East India Company was then called upon to lend their assistance to help in the lowering of the price of sugar. On the 15th of March 1792, his Majesty's Ministers to the British Parliament presented a report related to the production of refined sugar in British India. Lieutenant J. Paterson, of the Bengal establishment, reported that refined sugar could be produced in India with many superior advantages and a lot more cheaply than in the West Indies.

The people of New Guinea were probably the first to domesticate sugarcane, sometime around 8,000 BC. However, the extraction and purifying technology techniques were developed by people who were living in India. After domestication, its cultivation spread rapidly to Southeast Asia and southern China. India, where the process of refining cane juice into granulated crystals was developed, was often visited by imperial convoys (such as those from China) to learn about cultivation and sugar refining. [1] By the sixth century AD, sugar cultivation and processing had created Persia; and, from there that knowledge was brought into the Mediterranean by the Arab expansion. "Wherever they went, the [medieval] Arabs brought with them sugar, the product and the technology of its production. Spanish and Portuguese exploration and conquest in the fifteenth century carried sugar south-west of Iberia. Henry the Navigator introduced cane to Madeira in 1425, while the Spanish, having eventually subdued the Canary Islands, introduced sugar cane to them.[1]In 1493, on his second voyage, Christopher Columbus carried sugarcane seedlings to the New World, in particular Hispaniola.

Since the number of sugar factories were established in the private sector till the period of after Independence. The protection of Government Policies of various ways of 1932 was mainly responsible for the development of Sugar factories in India. The production of Sugar through Co-operative processing of Sugarcane was first attempted in India in1933. There were four Co-

operative sugar factories held in 1935 in Uttar Pradesh and Andhra Pradesh. In India 1960-61 there are 174 Sugar factories held off were 30 from Co-operative basis and other 144 is private sector. During the 1999—2000 there was total 430 sugar factories in India which is 252(58.60%) are Co-operative basis which is account for production of sugar 182 lack tone (58%).

In a developing economy like India it is not possible to progress toward industries prosperity if one depends on agriculture only. However agriculture helps to develop the allied industries which are call as agro-based industries. Rise and growth of agro—based industries will contribute to quantitatively the economic development of India. For which development in agriculture felt necessary to start and promote related agro industries. These industries not only convert the agricultural goods in to finished products, but also add value to the basic products.

The agro-based industry leaves a deep impact on the rural economy and brings about fundamental change in rural areas. They use agricultural outputs and induce farmers to produce variety of crops, use high yielding seeds and imply the modern techniques of production. They initiate the process of institutional and organization development, importance of general as well as technical education. Such industries like sugar industries having remarkable growth of several things with the help of development of transport and communication, which leads to development of employment potential.

Among various agro-based industries, sugar industries ranks second in importance after textile industry in India. Established of Co-operative sugar factory in a region has acted as a growth center for the development of region. Such development content like as Construction of roads, establishment nationalize and Co—operative banks, Co-operative marketing societies, educational institutions, medical centers etc. have brought all round development of the people of the region. It creates employment opportunities in the region and stop migration of youth from rural to urban area.

The development of agro-based industries has played a crucial role in the economic progress and planning of Maharashtra. In Maharashtra sugar factories have helped to create more balanced and well spread out industrial structure. It has compressively affected the development of both agriculture and industry. Especially, it has played pivotal role in changing rural life.

Maharashtra among the Indian states Maharashtra ranks at top in sugar production as well as recovery of sugar. These factories play a major role in the socio-economic development of rural areas of Maharashtra. The first sugar factory in Maharashtra was established in 1919 and

stared its crushing season in the year 1924-25. The second sugar factory was established in 1930 Walchand sugar factory. The Co-operative movement in sugar industries started with the first Sugar factory established in 1948 known as Pravara Co-operative Sugar Factory in Ahmadnagar district.

Maharashtra state is having first rank in the country for successful implementation of Co-operative movements and private sectors. In Maharashtra 1960-61 there were 27 Sugar Factories in which 14 were Co-operative sector and 13 is private sector. Today in Maharashtra at present year 2016—2017 there were 173 Sugar factories at which 119 Co-operative sector and 54 private sector. In last year 2015-2016 season 119 Sugar factories were in operation out of which 68.78 % are Cooperative sector and accounted for 9879 Lack MT (81.78 %) sugar production in the state.

The Sugar industry is the one of the important industries for the sustainable development life of rural people in Solapur district. It is started in 1960 at Malinagar in Malshiras tahsil on private sector. After words Sahakar Maharshi Shankarrao Mohite Patil Sugar industries were started Co-operative movement point of view started in 1962.

Today in Solapur district there are 36 Sugar factories situated out which 20 are on Co-operative basis and 16 are in private sector. Having total Sugar production of Solapur district Sugar industries was 1087453 MT which is second number in Maharashtra. In Lower Bhima basin there are 2 Co-operative bases and 5 number of Private base Industries.

1.8 SIGNIFICANCE OF THE PROBLEM

Agriculture is the back-bone of Indian economy at time of the First World War and agriculture contributed two-third of national income. (However, after the intention of planning India the share of agriculture has persistently declined because to the development of the secondary and tertiary sectors of the economy). The agriculture sectors provide livelihood to about 64% of total labor force. With rapidly increases in population there were absolute number of the people engaged in agriculture has become exceedingly large. Development of other economic sectors was not to be sufficient to provide essential employment as rapidly increasing population. Agriculture is providing raw materials to various industries but in case of sugar industry their importance is more for progress of sugar industries.

Sugar industry is second largest agro-based industry. It is also helpful to solve the problem of unemployment. The Sugarcane based industries will help to absorb some of the

unemployment and consequent rural-urban migration for seeking job. (The Sugar industry has enhanced agricultural productivity by providing various inputs like fertilizer, machinery techniques knows how financial assistance etc.) Finally Sugar industry is located within the Cane growing areas. Considering Sugarcane products and sugar industries sugarcane cultivation is helpful for trades and transports.

Sugar industry is one of the basic industries which is provided raw material to Paper industry, Winery industry, Ethanol production etc. These industries further helped to solve the problem of unemployment. In Lower Bhima Basin suffering from problems of unemployment**.**

Bhima River and sub-canals runs through south western part of Solapur district. This most benefited river for the agriculture cultivations of those regions. The Bhima Ujjani dam has the total Irrigation potential of 1.29, 440 hectares (I.C.A.) flow irrigation and 8500 hectares (I.C.A.) lift irrigation. The Eight tehsils such as Madha, Mohol, North Solapur, South Solapur, Malshiras, Pandharpur, Mangalwedha, Akkalkot, are benefiting area by left and right canals of the Bhima (Ujani) Irrigation Project. The Bhima (Ujani) Irrigation project has divided into five canals i.e. Ujani left canal, Ujani Right Canal, Begampur Branch Canal, Kurul Branch Canal, and the Mohol-Karamba Branch Canal with total length of 375 km total Irrigation 1,12,940 hectors by perennial cropping pattern and with length of 548 km and total irrigation 1, 47,800 hectors.

In the Solapur district the maximum beneficiaries are from Pandharpur and Mohol Tahsils i.e. 73 villages from Pandharpur Tahsil and 56 villages from Mohol Tahsil. Near about 73117 hectors irrigation facilities (49.47percent) has been sucked-up by the Pandharpur and Mohol Tahsil. While remaining (50.53per cent) (74683 hectors) irrigation facilities shared by Madha, Malshiras, Mangalwedha, North Solapur, South Solapur and Akkalkot Tahsils. Especially Bhima Basin is located central part of Solapur district. It has mostly rainfall from the southwest monsoon the average annual rainfall is 550 to 650 m.m. The climate of Bhima Basin is dry tropical type. The Bhima river flows in the middle part of study region and Bhima & Nira canal also provide more water to this region. The main observation in this study area is provided irrigation facilities, cropping pattern, mostly sugarcane production and sugar factories and its impact on regional development. The study of agricultural pattern in Bhima Basin with reference of tahsilwise selected sample villages in the Bhima Basin. In Indian agricultural is important factor for development of economy and sugar factory. It is second important factor for the

development of the rural economy, so the researcher selected research of Lower Bhima Basin for the impact of sugar Industry on regional development.

Lower Bhima Basin of has been selected from the present study. The following facts have motivated the author to undertake for study.

- The irrigation facilities, labour facility, transportation facility available in study region and transformed the agriculture pattern with needs to development of sugar industries and regional development
- Lower Bhima Basin region where the development of agriculture activities and technological aspects, and socio economic facility provided by sugar industries

The study region is the home region of the researcher and is familiar with the changing socio-economic conditions of the region due to soil condition, irrigation facilities, and climate etc. sugar cane recovery is better than Solapur district. The study region Lower Bhima Basin of Solapur district is also agrarian economic. In Lower Bhima Basin there are five sugar industries operated.

Firstly raw material of cane provides to sugar industries and grows industries production which internal exerts their favorable influence and rural economy.

Secondly sugar cane industries have raised the income of cultivators who are now in a position to allocate more funds to the development of agriculture leading to increasing productivity. Additional income strengthens purchasing power of the farmers which in turn helps in the improvement of slandered leaving and status.

Thirdly sugarcane cultivation and sugar industry to great extend minimized the intensity of rural unemployment and rural urban migration.

1.9 THE STUDY REGION

The Lower Bhima Basin is one of the most important regions of the Maharashtra and Karnataka state both in terms of area and population. This Lower Bhima Basin starts from base level Ujani dam i.e from village Takli to the village Gurujala in Karnataka State up to Krishna and Bhima Sangam. It flows through the Karmala, Malshiras Pandharpur Mohol, Mangalvedha, and South Solapur tahasil. And in Karnataka it flows through Indi, Afzalpur, Gangapur, Jevargi, Yadgir--Deosugar tahasil. Its geographical place on the map is Lower Bhima Basin in between

$18^0$04’15’ N to $16^0$28’25’ N latitude and **$75^0$05’43’ E to $77^0$14’19’ E longitudes**. It covers an area of 24548 km^2. And its length is **346 km**. Which is area lies mostly rural.

The Lower Basin is Scarcity affected region. It comes under average rain area yearly. The minimum average of rainfall in the region is **678 M.M**. The soil of this region is various and fertile land is also at Bhima basin.

. The river Bhima is one of the main feeders of river Krishna. The river Bhima rises from the Bhimashankar plateau in Pune district and runs south east direction and enters into Solapur district near Jinti village of Karmala tahsill and flows through the district of Pune. The overall length of Bhima River is 289 kilometer within the limit of the district of Solapur. The 110 kilometer length of the river Bhima, acts as winding since the river separate Karmala on the left from Indapur in the Pune district on the right. The river Bhima drains in the central part of the district, comprises the greater part of Karmala, Madha, Malshiras, Pandharpur, Mangalvedha, Mohol, and South Solapur tahsil. And in Karnataka it flows through Indi, Afzalpur, Gangapur, Jevargi, Yadgir--Deosugar tahasil

Hypothesis:

- The higher is surface irrigated area more is the increase sugarcane cultivation as well as growth of sugar Industry.
- The available water resources of study region having great impact on changing cropping pattern.
- The growth of sugarcane cultivation and Sugar Industry having great impact on Socio-economic, Educational, Cultural and Agricultural activities.

Objectives:

- To Study the Geographical Background as a basis of Regional Transformation of the Sugar Industry.
- To study the spatio-temporal changes in Sugar Industry in the study region.
- To examine the impact on Sugar Industry on Socio-economic Development.
- To assess the regional development in relation to Sugar Industry.
- To examine the problems and prospects of Sugar Industry.

1.12 REVIEW OF LITERATURE

Review of literature is concerned to the study of previews research work in the field of chosen research problem and other problems related to sugar industry. Review of literature is one of the most important components in research process which introduce research gap as well as the research process to a researcher. In order to get acquaintance with the research project to understand the research gaps in chosen research problem and earlier research studies associated with sugar industry, as like books, Ph.D. thesis, published research articles and published proceedings of conference papers were reviewed and the reviewed literature is presented.

The present study is related to sugar industry. For the present investigation the literature from different disciplines has been referred. The role researcher is very vital in analyzing and synthesizing the comprehensive picture of an issue. The geographical studies on sugar industry as such are relatively rare.

It has been already pointed out that the sugar industry being the second largest organized agro-industry in India plays a vital role in the economy of India, particularly in Maharashtra. It is situated in rural area owing to the highly perishable nature of raw material, i.e. sugarcane. The agro- industry leaves a deep impact on the rural economy. With the development in agriculture it is felt necessary to start and promote related agro-industries, because they not only convert the agricultural goods into finished product but also increase their value.

Karche,R.M. (1987) has worked on the topic, Co-operative Sugar Factories in Marathwada-A Critical Study for Ph.D. degree in 1987. He has discussed the licensing policy of the sugar industry of Govt. of India. He analyzed financial structure of Co-operative sugar factories, efficiency of sugar factories, in the supply of Sugarcane, Sugarcane development activities, Cost of production of Sugar and role of management in the development of sugar factories. He also studies the socio economic impact of Co-operative sugar factories in their area of operation.

More K. S. and Mustafa F. R. (1984) are studied irrigation requirements and development in Maharashtra. They have selected three objectives for the study viz. (1) to develop a method by which to quantify the need for irrigation facilities (2) to identify the areas of varying irrigation facilities and (3) to locate the areas of varying degree of development of irrigation facilities.

Patel K.S. (1990) studies economic capacity of sugar industry in Marathwada region of Maharashtra state. Gaikwad (1982) studied working and growth of Vitthal Sahakari Sakhar Karkhana Ltd. Venunagar. Dakle (1990), Khodave (1990) Pathare (1984) Shinde (1987) have examined socio-economic study of seasonal workers in a particular factory in Maharashtra.

Pagar S.K. (2011): in his article, "Role of sugar Co-operative in the rural development" discussed how the co-operative sugar industries in Maharashtra state has become a catalyst for all round development in rural area. And contribution of Co-operative sugar factories made a greater contribution to the economic and social development of the areas according to the regional requirement.

Patil R.R (2003): He worked on the topic, "A Spatio-Temporal Analysis of Sugar Industry in Solapur District: A Geographical Survey ''He analyzed the development of sugar factories and growth rate of sugarcane cultivation in various technical features in Solapur district. At the same time he discussed how the rapid development in sugarcane cultivation and sugar industry in the Solapur district.

Shrivastava, A.K. (2011): In his article, "Sugarcane Cultivation and Sugar Industry in India: Historical perspectives'' has given a historical development of sugar industries in India. At the same time he discussed how the rapid development in sugarcane cultivation and sugar industry in the country earned India prestigious position among sugar producing nations in the world. And how it is becomes vital for the socio economic development of India.

Recently the emphasis is given on sustainable rural development. There is realization that a nation cannot progress unless we have adopted programs for bringing out permanent relief for the control rural Poverty. Under development and unemployment in these areas will continue to grow. It means job opportunities were not created. Here, I have made to study the impact of agro-based industry one the rural development

1.13 DATABASE AND METHODOLOGY

The data collected and used for the period of 2001 to 2015. The study of impact of sugar industries on regional development and related change can be carried out by using various data source. The present study will be based on primary and secondary sources of data. The primary data is collected though field survey, questionnaires and personal interviews method and secondary data is collected through various government reports and available sources.

(I) SAMPLING

The Lower Bhima River runs through seven tahsils of Maharashtra State. And it runs through four tahsil in Karnataka state. Then we have take two villages in these tahsils for sampling method.

(II) DATA COLLECTION

A) PRIMARY DATA SOURCES

The primary data will be collected be conducting the intensive field work of the well planned and thoughtful questionnaires will be prepared so as to have the required data and information about various aspects i.e. working results of sugar factories, sugarcane production, sugarcane crushing, sugar production, factory workers, development of sugar industries, irrigation facilities, cropping pattern, agriculture land use, crop combination etc. statistical information collected from various sources.

B) SECONDARY DATA SOURCES

The secondary data collected from various sources i.e. survey of India district census handbook, statistical abstract of Solapur district, socio economic views, library of Vasantdada sugar institute Manjari (Pune), Socio-economic abstract in Karnataka State. Solapur District gazette, annual report of published by sugar factories, Indian sugar monthly bulletin published by Indian sugar mill association new Delhi above all these sources the researcher collected the data and visited different institute and collected data. All sugar factories in lower Bhima Basin were visited and collect the information.

1.14 LIMITATIONS OF THE STUDY

In this research we have investigated socio economic impact of sugarcane on areas of lower Bhima Basin. So far our research area is concerned is might be a unique attempt to study the process of socio and economic development with different parameters applied on micro level. While working on the research, we had come across various technical and scientific difficulties. However, we had tried our best to overcome those difficulties. Impact of sugar factories on rural area is multidimensional in the present research we have tried to study Sugar factories impacts on regional development in Lower Bhima Basin

Chapter Scheme

- Introduction / Appraisal of problem
- Geographical Background
- Spatio-temporal analysis of Sugar Industry
- Impact on Sugar Industry on Socio- economic Development
- Regional Development
- Problems and Prospects
- Conclusion

The first chapter **---** deals with introduction geographical approach, Human geography, Economical approach, Industrial geography, slow growth of industrial geography, Industrial approach, significance of the problem, the study area, Hypothesis, Objectives of the study, Review of literature, data base and Methodology etc.

Second chapter **---** Analyzed with region, geographical background, and location of study region, physiographic, drainage pattern, climate, soil, natural vegetation, irrigation facility, and population land holding, transportation etc.

Third chapter --- Analyzed with spatio-temporal development of sugar industry in lower Bhima basin growth of sugar industry, distribution of sugar factories in lower Bhima Basin growth and development, crushing capacity, sugar production, sugar recovery by products etc

Fourth chapter --- Socio--economic characteristics of regional development, impact of sugar factories on regional development sugarcane concentration and sugar industry, zone wise levels of sugarcane productivity etc.

Fifth chapter **---** Concept of region, concept of regional development, **Parameters of regional development** studied sugar industry and its impact on regional development on Lower Bhima Basin,

Sixth chapter --- Deals with the problems and prospects of sugar industries in Lower Bhima Basin conclusions have been presented with meaningful and further suggestions for the development of sugar industries in the Lower Bhima Basin.

Seven Chapter --- Conclusions

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